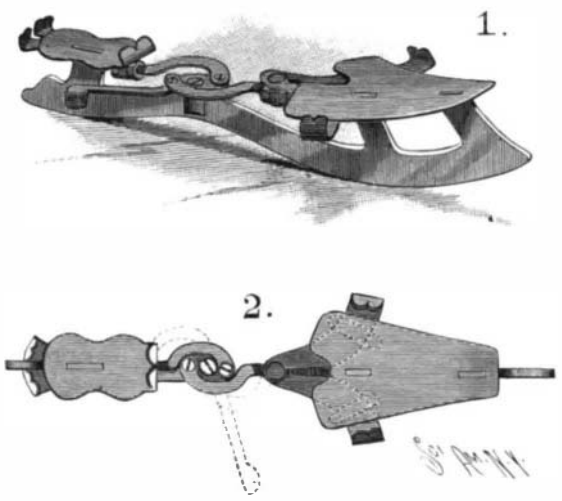
AN IMPROVEMENT IN ICE-SKATES.

In the accompanying illustration we present a skate which is provided with an improved lock for the heel and sole clamps, the lock being so constructed that either of the clamps may receive an initial or broad adjustment without disturbing the adjustment of the other clamp.

Fig. 1 is a perspective view of the skate, and Fig. 2 is a top plan view in which the clamps are shown in closed position by positive lines, and in open position by dotted lines.

The runner, in order to offer as little friction as possible, is arched, so that it bears on the ice only beneath the heel and sole plates.



FILOR'S IMPROVEMENT IN ICE-SKATES.

Upon the heel plate a clamp is held to slide, and upon the sole plate diverging clamps pivoted together at their rear ends are held to slide. Between the sole and heel clamps a lever is fulcrumed. Oppositely curved links pivoted to the lever, one at each side of the fulcrum, are adjustably connected by means of screw shanks with the sole and heel clamps. The pivotal connections between the links and the lever are out of alinement with the center of the fulcrum, so that when the curved portions of the links are brought close together by the movement of the lever, they will lock themselves in this position.

As each link is independently adjustable upon its clamp, the throw of the clamps may be separately regulated to change the locking action of the lever. The skate is the invention of Charles F. Filor, care of S. S. Moore, Trenton, N. J.

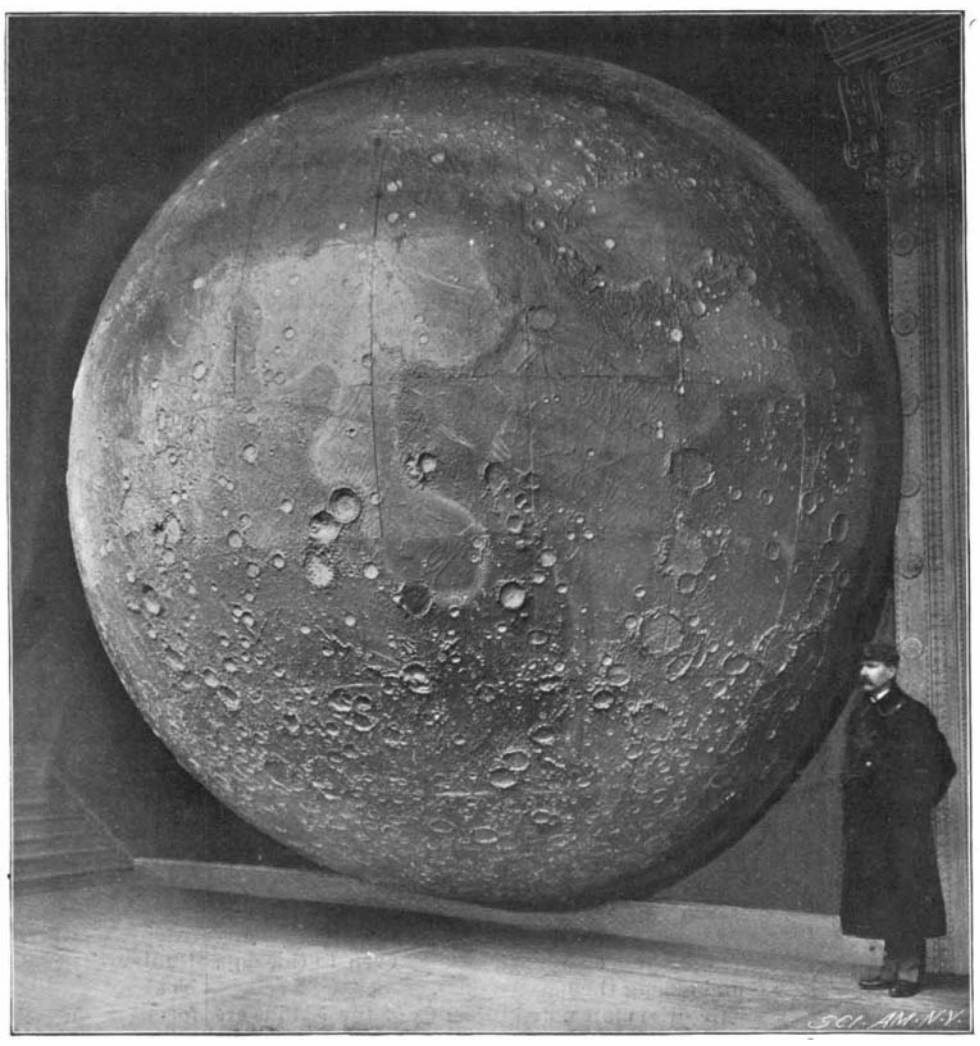
A GIGANTIC ARTIFICIAL MOON.

BY OLIVER C. FARRINGTON.

Under the above heading, the SCIENTIFIC AMERICAN of April 9, 1881, urged the attendance of its readers upon an exhibition at Steinway Hall, New York city, of a model of the moon 16 feet in diameter. The article closed by expressing the hope that the model might ultimately find a permanent abiding place in "some of our public institutions." After a lapse of nearly eighteen years, this wish has been realized, and the model is now permanently installed at the Field Columbian Museum, Chicago. Students of science, whether casual or professional, may well rejoice over the opportunity thus afforded them to become familiar with the physiography of the earth's satellite with but a tithe of the labor and equipment required to study it by means of a telescope. What was said of the model by the SCIENTIFIC AMERICAN then is true still: "It is by far the largest, most elaborate, and expensive portrait of the moon ever made, and, seeing that it was constructed for and under the immediate direction of one of the most eminent selenographers, Dr. Schmidt, Director of the Observatory at Athens, Greece, we may safely accept it as a faithful portrait." The model is a hemisphere 19·2, not 16 feet in diameter. It is made up of 116 sections, 15° in length by 15° in breadth, which serve to mark upon the surface parallels and meridians. The horizontal scale is 1 : 600.000, the vertical 1 : 200,000. The elevations are therefore exaggerated but three times, a much smaller increase than is usually necessary to bring out features of detail on relief maps of the earth's surface. By means of this scale the various features of the moon's surface have been accurately and vividly portrayed. The extraordinary volcanic activity which our satellite has undergone impresses one at the first glance, while the mountains, plains, cliffs, and chasms, surpassing in grandeur anything to be found upon the earth, are vividly shown.

Here, for instance, are Copernicus with its vast crater 46 miles in diameter, its interior marked by terraces formed by huge landslips which took place along the mighty ramparts; here are the awful chasms, a mile wide and 100 miles long, radiating from Triesnecker; the magnificent group of Theophilus, Cyrillus and Catharina, with craters 60 and 65 miles in diameter merging into one another; the walled plain Schickard, 153 miles in diameter, with ramparts several miles in height; the "thin cheese" of Wargentin, apparently a crater that has been filled with lava to the brim which remains in place cold and hard; the mighty "seas" of Oceanus Procellarum and Mare Crisium, which are in reality vast plains, covering areas of 90,000 and 78,000 square miles; and all the other objects to the number of twenty thousand, which it has been the labor of astronomers from the earliest times to measure and describe. Later discoveries are not likely to add much detail necessary to the completeness of such a model, for the features sufficiently large to be shown by it have been agreed upon by astronomers for many years. The impression gained of the condition of the moon's surface by looking at the model is that it is a scene of utter desolation and ruin—a globe without life or comfort for beings such as man. This is undoubtedly what one would find could he make a trip to the moon itself, and a view of this model is perhaps the best substitute for such a journey which has yet been devised.

Mr. Lewis Reese, of Chicago, was the donor of the model to the Museum.



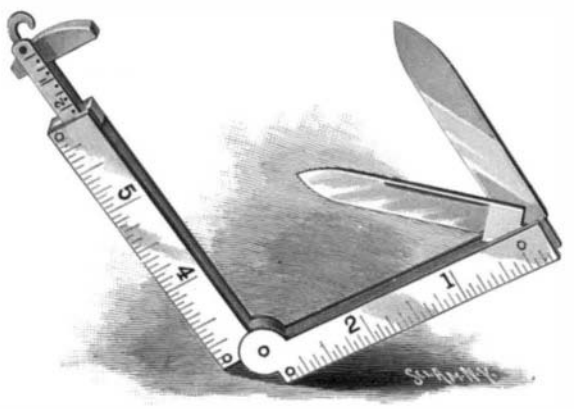
MODEL OF THE MOON NINETEEN FEET IN DIAMETER RECENTLY INSTALLED IN THE FIELD COLUMBIAN MUSEUM.

Cloth from Pineapple Fiber.

In an article on "Possible Fiber Industries of the United States," in Appleton's Popular Science Monthly (November, 1898), C. R. Dodge tells us the leaf of the pineapple contains a very fine silky fiber that may be utilized in the manufacture of textile fabrics. He says: "A pineapple plant matures but one apple in a season, and after the harvest of fruit the old leaves are of no further use to the plant, and may be removed. The leaves have the same structural system as the agaves—that is, they are composed of a cellular mass through which the fibers extend, and when the epidermis and pulpy matter are eliminated the residue is a soft silk-like filament, the value of which has long been recognized. Only fifty pounds of this fiber can be obtained from a ton of leaves, but, as the product would doubtless command double the price of Sisal hemp, its production would be profitable. How to secure this fiber cheaply is the problem. The Sisal hemp machines are too rough in action for so fine a fiber, and, at the rate of ten leaves to the pound, working up a ton of the material would mean the handling of over twenty thousand leaves to secure perhaps three dollars' worth of the commercial product. Were the fiber utilized in the arts, however, and its place established, it would compete in a measure with flax as a spinning fiber, for its filaments are divisible to the ten-thousandth of an inch. The substance has already been utilized to a slight extent in Eastern countries (being hand-prepared) in the manufacture of costly, filmy, cobweb-like fabrics that will almost float in air."

A COMBINATION-TOOL.

An ingenious combination-tool has been invented by Beniamino Ibelli, 139 Hudson Avenue, Brooklyn, New York city, which comprises essentially a rule, a penknife, a gage, and a weighing-scale.



IBELLI'S COMBINATION-TOOL.

Referring to the annexed illustration, it will be seen that the tool consists of a rule formed in two sections, hinged together, each section being recessed at one side. Within the recess of the first section and between the side walls are pivoted two knife-blades, the backs of which are adapted to be received by the recess of the second section when the tool is folded and the blades are closed.

Behind the rear-wall of the recess in the second section, a chamber is formed, which receives the graduated bar of a weighing-scale, controlled by a retractile spring. On one of the outer surfaces of the section a gage is adapted to slide in guideways, and is designed accurately to caliper shorter diameters when the two rule-sections are closed.

Kitchen Bacteriology.

According to The Dietetic and Hygienic Gazette, a Königsberg doctor, Privat-docent Dr. Jäger, recently gave a course of hygiene and bacteriology for ladies, which included practical exercises in applied bacteriology, for instance, in the preparation and preservation of food by methods used in bacteriological work. At the close of the lectures the hearers were allowed to invite their friends to an exhibition of kitchen products — some raw and some cooked—that had remained in a warm room for periods varying from five to sixteen days, and which were all found perfectly fresh and quite unchanged in appearance and taste. Nor had any complicated procedure been required to obtain this result.

The method simply consisted in: 1. The use of vessels with well-fitting, overlapping lids, instead of the inside lids used in kitchens the world over, which allow stray bits of matter that may adhere to their rim to fall into the food. 2. Avoidance of opening the vessels in which the food was kept, or, where this was indispensable, careful manipulation as in bacteriological work. 3. The use of cotton wool as a covering. Cotton-wool lids had been specially prepared to fit the wide tops of the food vessels; they consisted of a circular disk of cotton wool, tightly held between two metal rings, the outer of which formed the overlapping rim of the lid. The Gazette says that it is to be hoped that Dr. Jäger will find imitators, and that "kitchen bacteriology" may become a study with ladies. Certainly there is much room for improvement in the old-fashioned kitchen methods to which our "family plain cooks" cling with such desperate energy, and which they seem to regard with an almost superstitious reverence.